M. S. & E. W. CURTISS.

GANG-PLOW.

No. 180,464. Patented Aug. 1, 1876.

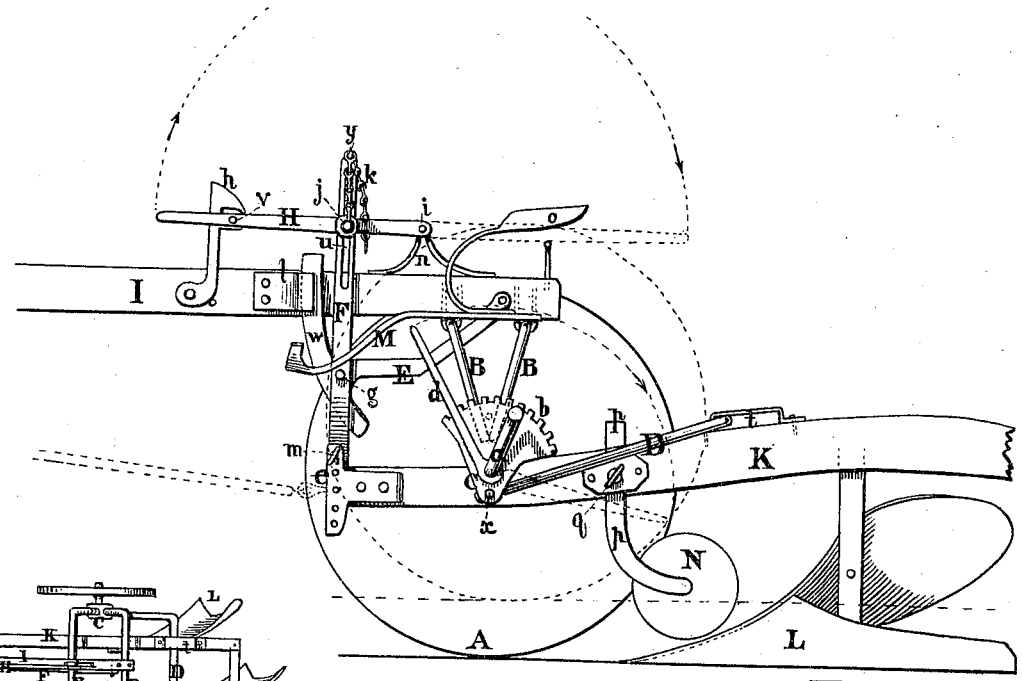

Fig. 1.

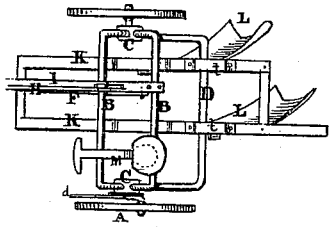

Fig. 3.

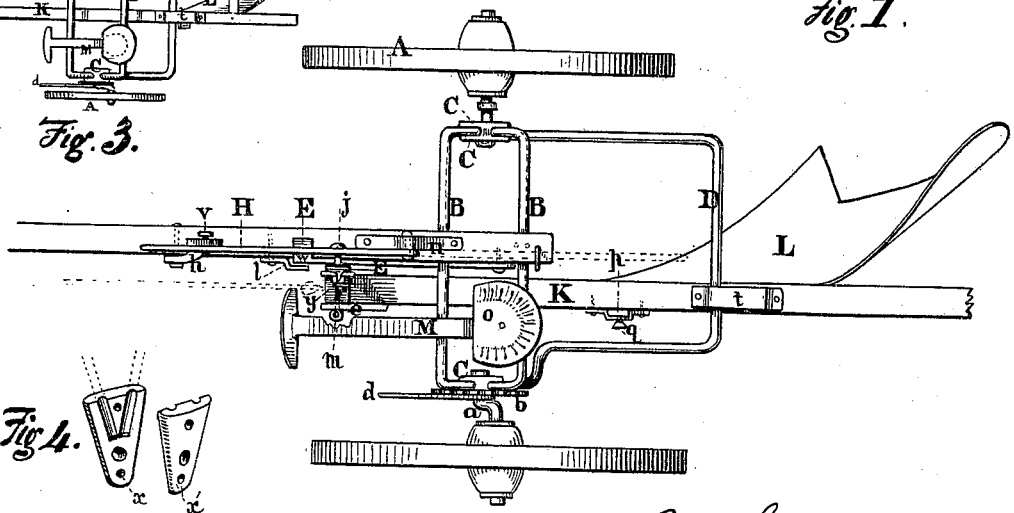

Fig. 2.

Fig. 4.

Witnesses

William Fatherwood

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by E. Thurlow his atty
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UNITED STATES PATENT OFFICE.

MARSHALL S. CURTISS AND EDGAR W. CURTISS, OF BRADFORD, ILLINOIS, ASSIGNORS OF ONE-THIRD THEIR RIGHT TO JAMES B. DOYLE, OF SAME PLACE.

IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **180,464**, dated August 1, 1876; application filed December 29, 1875.

To all whom it may concern:

Be it known that we, MARSHALL S. CURTISS and EDGAR W. CURTISS, of Bradford, in the county of Stark, in the State of Illinois, have invented an Improvement in Gang-Plows; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a side elevation, the nearest or crank wheel being removed; Fig. 2, a superficial view of same; Fig. 3, double-beam plow; Fig. 4, perspective view of couplings.

The first part of this invention consists in certain devices for raising the plow-beam and plows horizontally from the soil at one motion, in such a manner that the points of the plow rise a little faster than the heel in the first part of the ascent, and in which the draft is made auxiliary in aiding such elevation, and in devices for automatically locking the elevating-lever. The second part of the invention consists in devices for gaging and locking the front end of the beam at any desired depth in plowing.

In the first part of the invention the devices we employ are as follows: We attach the rear end of the plow-beam K, (either double or single beam,) by means of a slot, *t*, on the surface of the beam or beams, to the horizontal transverse arched brace or lifter D, the lower ends of the lifter being pivoted on each side in the respective couplings or boxes C C on the axles *a a*. The front end of the beam K is pivoted, by a cross-bolt, *m*, to the lower end of a link, F, which is, in turn, pivoted at *g* to the forward end of an arc-headed pivoted bar, E, pivoted at its rear end to the heel of the tongue I. The arc-head W of this bar merely serves (by means of its bearing in a vertical clevis or slot, *l*, on the side of the tongue) as a guide to keep the bar strictly to a vertical motion. The link F extends from its pivot-bolt *m* to some distance above said tongue, and terminates there in a long slot, *u*, in which slides a pin, *j*, which confines it to the lifting-lever H, which lever is pivoted to the tongue I on a bearing, *n*, attached to the latter. The free end of said lever has a side pin, *v*, which falls into the hooked jaws of the automatic catch *h* on the side of the tongue in front of the link F. The tongue I is rigidly attached to the double supporting-arches B B by means of staples or bolts, and these arches converge at the lower point of the so-formed V, and are respectively confined at each side of the plow in the respective split couplings C C, which also form the axle-boxing, and also form the pivots, respectively, of the lifter D. These couplings are divided down the center vertically, and are each provided with recesses to receive the ends of the arches B B between them. A bolt fastening the two halves together passes between said brace ends; another bolt for same purpose is used below this. As before said, the wheel-axles *x x* pass through the respective couplings below the arc-heads, one wheel, which travels above the furrow, being provided with a crank, *a*, in the usual manner, and also provided with a ratchet, *b*, and detent-lever *d*, to adjust the height of the wheel. This ratchet (semicircular in shape) may be cast as an integral part of the half-coupling. The lower part of the respective couplings also receives the end of the lifter D, in which it is confined by a pin, *x x*. The arches B B support the seat-bar M at a short distance from, and parallel with, the tongue, furnished with the foot-rest *q* and seat *o*. Only one plow-beam is shown in the drawing; but we generally use double or parallel beams braced together in the usual way.

The second part of our invention consists in connecting the pin *j* of the lever H with the hook *y* on top of the link F, thereby gaging and preventing the further descent of the plow-beams into the soil.

The operation of this invention is as follows: Fig. 1 shows the plow at work. The raising, by hand, of the lever H brings its pin *h* against the upper end of the slot in the link F, which now causes the front end of the plow-beam K to rise, (elevating the points of the plows,) and the lever H, being now detached from the jaw *h*, allows the draft of the horses to be entirely

upon the plow-beam, by which means the animals help or second the work of said lever. The motion of the latter being further continued over the dead-center brings the transverse part of the beam-lifter D against the back of the slot *s* on the beam, and the latter begins to be raised behind, (as well as in front,) and the elevation of front and rear is now simultaneous, bringing the beam and plows up, and throwing them forward close under the arches B B, so as to balance the tongue. The set-screw *q* passes into a hole or recess in the flat face of the stem *p* of the colter N, detaining the latter at required height.

What we claim as our invention is—

1. The lifting-link F, provided with the pivot-pin *g*, connection with the arc-headed bar E and slot *u*, connection with the pin *j* of the lever H, in combination with the arc-headed lever E and the lifting-lever H, substantially as and for the purpose described.

2. The lifting-link F, provided with slot *u* and pivot *g*, the arc-headed bar E, its bearing-slot *l*, and the lifting-lever H and its detent-jaw *h*, substantially arranged as described.

3. The plow-beam K, provided with the loop *t*, in combination with the lifting-bar D, and with the slotted link F, arc-headed bar E, keeper *l*, lever H, pins *j*, and with the frame, substantially as shown and described.

4. The combination, with the colter-stem *p* and its staple, of the set-screw *q*, as and for the purposes described.

In testimony that we claim the foregoing gang-plow we have hereunto set our hands this 13th day of December, A. D. 1875.

MARSHALL S. CURTISS.
EDGAR W. CURTISS.

Witnesses:
ALONZO B. ABBOTT,
BRADFORD F. THOMPSON.